

This Page Is Inserted by IFW Operations
and is not a part of the Official Record

BEST AVAILABLE IMAGES

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images may include (but are not limited to):

- BLACK BORDERS
- TEXT CUT OFF AT TOP, BOTTOM OR SIDES
- FADED TEXT
- ILLEGIBLE TEXT
- SKEWED/SLANTED IMAGES
- COLORED PHOTOS
- BLACK OR VERY BLACK AND WHITE DARK PHOTOS
- GRAY SCALE DOCUMENTS

IMAGES ARE BEST AVAILABLE COPY.

**As rescanning documents *will not* correct images,
please do not report the images to the
Image Problem Mailbox.**



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/013,121	12/07/2001	Timothy E. Walsh	12334 B	9470

7590 04/29/2003

Hart, Baxley, Daniels & Holton
59 John Street, Fifth Floor
New York, NY 10038

[REDACTED] EXAMINER

RODRIGUEZ, RUTH C

ART UNIT	PAPER NUMBER
3677	

DATE MAILED: 04/29/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No. 10/013,121 Examiner Ruth C. Rodriguez	Applicant(s) WALSH ET AL. Art Unit 3677
--	--

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 07 December 2001.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-23 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 07 December 2001 is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) The proposed drawing correction filed on _____ is: a) approved b) disapproved by the Examiner.
 If approved, corrected drawings are required in reply to this Office action.
- 12) The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
 a) The translation of the foreign language provisional application has been received.
- 15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ . |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ . | 6) <input type="checkbox"/> Other: _____ . |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Walsh et al. (US 5,195,789) in view of Cohn (US 2,039,886).

Walsh discloses a connector (12) joins a first piece of sheet metal (30) and a second piece of sheet metal (56) together end-to-end (Figs. 1-6). The connector has a length and a longitudinal centerline. The first piece of sheet metal has a raw free end (50) with at least one wedge-shaped reverse button lock projection (60) and the second piece of sheet metal has a raw free end (Figs. 1-6). The connector comprises a first wall (18), a second wall (33), a ledge (36) and a third wall (14). The second wall and said first wall define a first channel (34) therebetween. The ledge extends inwardly from said second wall and the ledge extends into said first channel (Fig. 5). The first channel lockingly receives the raw free end of the first piece of sheet metal by virtue of the at least one wedge-shaped reverse button lock projection on the raw free end of the first piece of sheet metal spreading the second wall away from the first wall as the raw free end of the first piece of sheet metal slips through the first channel until such time as the at least one wedge-shaped reverse button lock projection on the raw free end of the first piece of sheet metal just clears the ledge causing said second wall to unspread, and in

so doing, causes the at least one wedge-shaped reverse button lock projection on the raw free end of the first piece of sheet metal to be snapingly engaged onto, and lockingly captured against, said ledge, and in so doing, the first piece of sheet metal is secured in said connector (C. 2, L. 65-68 and L. 1-4). The third wall terminates in a free edge (22). The third wall and said first wall define a second channel (20) therebetween. The second channel receives the raw free end of the second piece of sheet metal and retains raw free end by virtue of a viscous adhesive sealant. The second piece of sheet metal is secured in said connector (Fig. 2). The first channel and the second channel open in opposite directions from each other for joining the first piece of sheet metal and the second piece of sheet metal together end-to-end (Fig. 5). The first channel and the second channel are offset relative to each other (Fig. 5). Walsh fails to disclose that the second piece of sheet metal has at least one wedge-shaped reverse button lock projection, a joggle inward of the at least one wedge-shaped button projection and a folded free edge on the third wall. However, Cohn teaches a connector (18) having a channel (66) formed between a first wall (65) and a second wall (63). The second wall has a free edge (71) and the free edge of the second wall is folded inwardly onto itself so as to form a folded free edge (70). A piece of sheet metal has a raw free end (60), the free edge of the sheet metal is folded inwardly onto itself so as to form a folded free edge (58) and a joggle (61) inward of the folded free edge thereon (Fig. 10). The channel lockingly receives the raw free end of the second piece of sheet metal by virtue of the folded free edge on the raw free end of the sheet metal spreading the second wall away from the first wall as the piece of sheet metal slips through the

Art Unit: 3677

channel until such time as the at folded free edge on the raw free end of piece of sheet metal just clears said folded free edge of said second wall causing said second wall to unspread, and in so doing, causes the folded free edge on the raw free end of the piece of sheet metal to be snapingly engaged onto, and lockingly captured against, said folded free edge of said second wall, and in so doing, the piece of sheet metal is secured in said connector (P. 3, C. 2, L. 30-48). The channel is offset relative to a third wall of the connector, as a result thereof, requires the joggle on the raw free end of the piece of sheet metal to offset the piece of sheet metal so as to align the third wall of the connector with the piece of sheet metal to avoid a need for field dressing. The use of the folded free edge of the second wall of the connector with the folded free edge of the piece of sheet metal securely locks the connector with the sheet metal (P. 3, C. 2, L. 43-48). Therefore, it would have been obvious to one having ordinary skill in the art at the time of applicant's invention to have a folded free edge on the third wall of the connector, a folded free edge on the second piece of sheet metal and a joggle inward of the folded free end of the second piece of sheet metal as taught by Cohn in the third wall of the connector and the second piece of sheet metal disclosed by Walsh. Doing so, securely locks the connector with the sheet metal. Regarding to having at least one wedge-shaped reverse button lock projection in the second piece of sheet metal, it would have been obvious to one having ordinary skill in the art at the time of applicant's invention to have the folded edge taught by Cohn replaced with the at least one wedge-shaped reverse button lock projection disclosed by Walsh because both the folded free

edge and the at least one wedge-shaped reverse button lock projection are used to lock the end of a sheet of metal to the connector.

Walsh discloses that:

- The connector is made from one continuous piece of pliable sheet metal and the one continuous piece of pliable sheet metal is bent, rolled, and molded to form the connector (C. 2, L. 27 and 28).
- The one continuous piece of pliable sheet metal has a thickness and the thickness of the one continuous piece of sheet metal ranges from eighteen to twenty-four gauge (C. 3, L. 48-51).
- The one continuous piece of pliable sheet metal is made from galvanized sheet steel that combats corrosion (C. 3, L. 48-51).

Walsh and Cohn fail to disclose that the connector is made from extruded plastic. However, it would have been obvious to one having ordinary skill in the art at the time of applicant's invention to make the connector from extruded plastic, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. In this case, the use of plastic is highly recommended because of its light weight that is highly desired in ducts, it will not become corroded as metal connectors and the connector will be easier and less costly to make because of the extrusion process.

Walsh also discloses that:

- The connector further comprising a fourth wall (38,40) extending from the ledge to a terminal edge

- The connector further comprising a flange (44) extending outwardly from the fourth wall and the flange structurally stiffens said connector.
- The connector further comprising an adhesive sealing compound (24,24').

The adhesive sealing compound material is highly viscous (C. 2, L. 36-37). The adhesive sealing compound material (24') fills the first channel, the adhesive sealing compound material adheres to said first channel and the adhesive sealing compound material is for adhering to the raw free end of the first piece of sheet metal (C. 2, L. 60-68, C. 3, L. 1-12 and Fig.5). The adhesive sealing compound material is for sealing the raw free end of the first piece of sheet metal in the first channel against leakage of a material flowing along the first piece of sheet metal (C. 3, L. 24-47). The adhesive sealing compound material (24) fills the second channel, the adhesive sealing compound material adheres to the second channel and the adhesive sealing compound material is for adhering to the raw free end of the second piece of sheet metal (C. 2, L. 36-37 and Fig.5). The adhesive sealing compound material is for sealing the raw free end of the second piece of sheet metal in said second channel against leakage of a material flowing along the second piece of sheet metal (C. 3, L. 24-47).

- The first wall is flat, the second wall is flat and the third wall is flat (Fig. 5).
- The second wall is parallel to the first wall and the third wall is parallel to the first wall (Fig. 5).
- The second wall is slightly spaced from one side of the first wall so as to allow the first channel to be narrow and the third wall is slightly spaced from the other side of the first wall so as to allow said second channel to be narrow (Fig. 5).

- The second wall is one-piece with the first wall (Fig. 5). The second wall is bent from one longitudinal edge of the first wall to fold thereover in a direction towards the other longitudinal edge of the first wall (Fig. 5). The third wall is one-piece with the first wall (Fig. 5). The third wall is bent from the other longitudinal edge of the first wall to fold thereunder in a direction towards the one longitudinal edge of the first wall (Fig. 5).
- The first channel opens laterally so as to form a lateral opening and the lateral opening of the first channel is for receiving the raw free end of the first piece of sheet metal (Fig. 5). The second channel opens laterally so as to form a lateral opening and the lateral opening of the second channel is for receiving the raw free end of the second piece of sheet metal Fig. 5).

Walsh discloses that the second wall terminates in a terminal edge, the terminal edge of the second wall is disposed in close proximity to the longitudinal center line of the connector and the terminal edge of the second wall is disposed to one side of the longitudinal centerline of the connector (Fig. 5). The edge of said third wall is disposed in close proximity to the longitudinal centerline of the connector and the edge of the third wall is disposed to the other side of the centerline of the connector (Fig. 5). The ledge extends perpendicular from the second wall and the ledge extends inwardly from the terminal edge of the second wall to a terminal edge (Fig. 5). The terminal edge of the ledge is slightly spaced from the first wall (Fig. 5). The fourth wall extends from said terminal edge of the ledge to a terminal edge and the terminal edge of the fourth wall is disposed in substantial alignment with said folded free edge of said third wall (Fig. 5). Walsh fails to disclose the folded free edge of the third wall. However as mentioned

above, Cohn teaches a folded free edge of the second wall used to lockingly engage a second piece of sheet metal. Therefore, it would have been obvious to one having ordinary skill in the art at the time of applicant's invention to have a folded free edge on the third wall of the connector as taught by Cohn in the third wall of the connector disclosed by Walsh. Doing so, securely locks the connector with the sheet metal.

Walsh also discloses that :

- The fourth wall is flat, the fourth wall is parallel to the first wall, the fourth wall is parallel to the second wall and the fourth wall is parallel to the third wall.
- The fourth wall has a drill rail, the drill rail extends the length of the connector, the drill rail prevents a self-tapping sheet metal screw being screwed into the fourth wall from skipping thereacross (C. 3,L. 52-56). The self-tapping sheet metal screw is for screwing into the fourth wall, the first piece of sheet metal, the first wall, the second piece of sheet metal, and the third wall if required in order to comply to a local building code (C. 3,L. 52-56).
- The flange is flat and extends outwardly from the terminal edge of the fourth wall to a free edge. The flange extends in a direction away from the first wall, the flange extends in a direction away from the second wall, the flange extends in a direction away from the third wall and the flange has a free edge (Fig. 5). The free edge of the flange is folded onto itself in a direction toward the ledge so as to form a folded free edge and the folded free edge of the flange further structurally stiffens said connector and eliminates a sharp edge (Fig. 5). Walsh fails to disclose that the free edge is folded onto itself in a direction away from the ledge. However, it would have been obvious to one having

ordinary skill in the art at the time the invention was made to have the ledge folding away from the ledge instead of folding toward the ledge because a change in shape of a prior art device is a design consideration within the skill in the art. *In re Dailey*, 357 F. 2d 669, 149 USPQ 47 (CCPA 1966). Especially, since the applicant fails to provide any advantage derived from orientating of the folded edge away from the ledge instead of being oriented toward the ledge.

- The first wall extends the length of said connector, the second wall extends the length of the connector, the third wall extends the length of the connector, the ledge extends the length of the connector, the fourth wall extends the length of the connector and the flange extends the length of the connector (Fig. 6).
- The flange has a height and the height of said flange is directly proportional to the length of said connector (Figs. 5 and 6).

Walsh fails to disclose that the height of the flange is in a range of approximately 3/8 inches to approximately 1-3/8 inches. However, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have the height of the flange being in a range of approximately 3/8 inches to approximately 1-3/8 inches, since such a modification would have involved a mere change of the size of a component. A change in size is generally recognized as being within the level of ordinary skill in the art. *In re Rose*, 105 USPQ 237 (CCPA 1955).

Regarding claim 21 having almost the same limitations as claim 1, Walsh also discloses that two pieces of sheet metal (30,56) are being joined end-to-end by a connector (12).

The rejection of claim 1 used above can also be used to reject claim 22 because claim 22 only recites one piece of sheet metal (56) being received by the connector (12) but the rest of the limitations will also be the same with the exception of the second piece of sheet metal and the second channel.

Finally, claim 23 can also be rejected using the rejection made for claim 1. Claim 23 recites that the same limitations of claim 1 but as disclosed by Walsh the second piece of sheet metal does not have at least one wedge-shaped reverse button lock projection. However, Walsh still will fail to mention a joggle in the second piece of sheet metal. Nonetheless as mentioned above Cohn teaches a piece of sheet metal having a joggle to offset the piece of sheet metal so as to align the third wall of the connector with the piece of sheet metal that can avoid a need for field dressing (P. 3, C. 2, L. 34-39). Therefore, it would have been obvious to one having ordinary skill in the art at the time of applicant's invention to have a joggle in the second piece of sheet metal as taught by Cohn in the second piece of sheet metal disclosed by Walsh. Doing so, will align the second piece of sheet metal with the first piece of sheet metal that could avoid the need for field dressing.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Zack (US 1,935,690), Somers (US 2,275,572), Deitsch (US 2,498,753), Coulters (US 2,752,950), Vanden Berg (US 2,965,397), Collins (US 3,479,073), Kelvar (US 3,836,181), Marquette et al. (US 4,009,894), Smitka (US 4,252,350), Arnoldt (US

4,881,762), Jyh-Long (US 5,103,872), European Patent Document EP 0 298 912 A1 and International Patent Document WO 89/10512 are cited to show state of the art with respect to connector for two pieces of sheet metal.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ruth C Rodriguez whose telephone number is (703) 308-1881. The examiner can normally be reached on M-F 07:15 - 15:45.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, J. J. Swann can be reached on (703) 306-4115.

Submissions of your responses by facsimile transmission are encouraged. Technology center 3600's facsimile number for before final communications is (703) 872-9326. Technology center 3600's facsimile number for after final communications is (703) 872-9327. Recognizing the fact that reducing cycle time in the processing and examination of patent applications will effectively increase the patent's term, it is to your benefit to submit responses by facsimile transmission whenever permissible. Such submission will place the response directly in our examining group's hands and will eliminate Post Office processing and delivery time as well as PTO's mailroom processing and delivery time. For a complete list of correspondence **not** permitted by facsimile transmission, see MPEP § 502.01. In general, most responses and/or amendments not requiring a fee, as well as those requiring a fee but charging such fee to a deposit account, can be submitted by facsimile transmission. Responses requiring a fee that the applicant is paying by check **should not be** submitted by facsimile transmission separately from the check.

Responses submitted by facsimile transmission should include a Certificate of Transmission (MPEP § 512). The following is an example of the format the certification might take:

I hereby certify that this correspondence is being facsimile transmitted to the Patent and Trademark Office (Fax No. (703) 872-9326) on (Date).
(Typed or printed name of person signing this certificate)
(Signature)

If your response is submitted by facsimile transmission, you are hereby reminded that the original should be retained as evidence of authenticity (37 CFR 1.4 and MPEP § 502.02). Please do not separately mail the original or another copy unless required by the Patent and Trademark Office. Submission of the original response or a follow-up copy of the response has been transmitted by facsimile will cause further unnecessary delays in the processing of your application, duplicate responses where fees are charged to a deposit account may result in those fees being charged twice.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1113.

Ruth C. Rodriguez
Patent Examiner
Art Unit 3677

RGR
rcr
April 20, 2003

Robert J. Sandy
ROBERT J. SANDY
PRIMARY EXAMINER